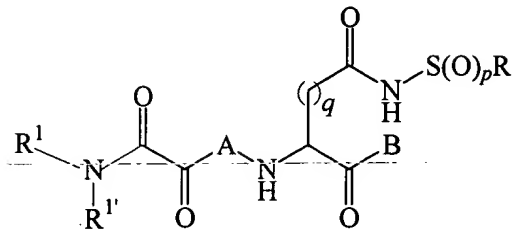
CLAIMS

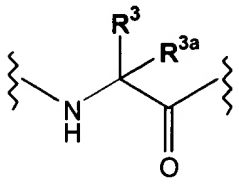
We claim:

1. A compound of the following formula:

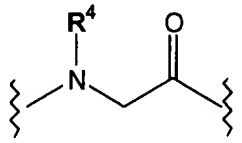


wherein:

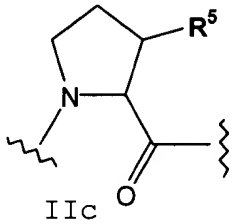
A is a natural or unnatural amino acid of Formula IIa-i:



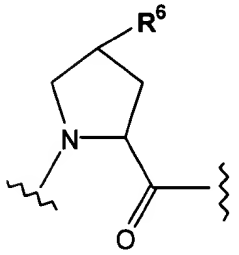
IIa



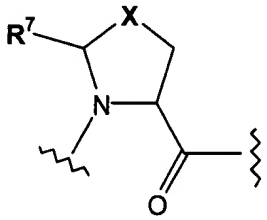
IIb



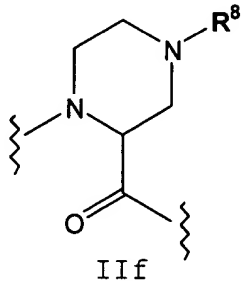
IIc



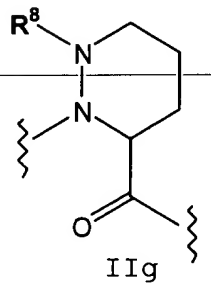
IId



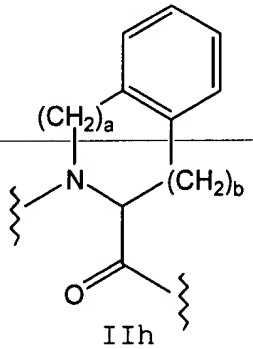
IIe



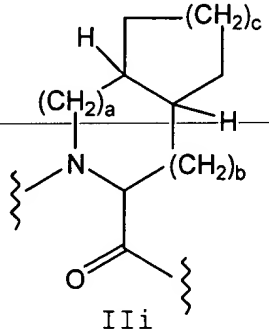
IIf



IIg

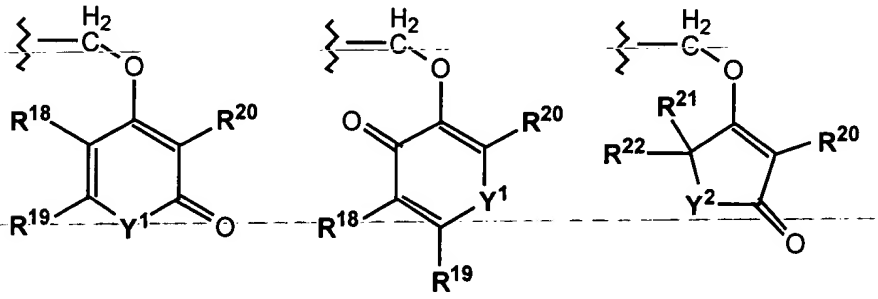


IIh



IIi

B is a hydrogen atom, a deuterium atom, alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, 2-benzoxazolyl, substituted 2-oxazolyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), $(CH_2)_n$(1 or 2-naphthyl), $(CH_2)_n$(substituted 1 or 2-naphthyl), $(CH_2)_n$(heteroaryl), $(CH_2)_n$(substituted heteroaryl), halomethyl, CO_2R^{12}, $CONR^{13}R^{14}$, CH_2ZR^{15}, CH_2OCO(aryl), CH_2OCO(heteroaryl), or $CH_2OPO(R^{16})R^{17}$, where Z is an oxygen or a sulfur atom, or B is a group of the Formula IIIa-c:



IIIa IIIb IIIc

p is 1 or 2;

q is 1 or 2;

R and R^1 are the same or different and independently alkyl, cycloalkyl, (cycloalkyl)alkyl, phenyl, substituted phenyl, phenylalkyl, substituted phenylalkyl, naphthyl, substituted naphthyl, (1 or 2 naphthyl)alkyl, substituted (1 or 2 naphthyl)alkyl, heterocycle, substituted heterocycle, (heterocycle)alkyl, substituted (heterocycle)alkyl, $R^{1a}(R^{1b})N$ or $R^{1c}O$;

$R^{1'}$ is hydrogen, alkyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, heterocycle or substituted heterocycle;

or R^1 and $R^{1'}$ taken together with the nitrogen atom to which they are attached form a heterocycle or substituted heterocycle;

and wherein:

R^{1a} and R^{1b} are the same or different and, at each occurrence, independently hydrogen, alkyl, cycloalkyl, (cycloalkyl)alkyl, phenyl,

substituted phenyl, phenylalkyl, substituted phenylalkyl, naphthyl, substituted naphthyl, (1 or 2 naphthyl)alkyl, substituted (1 or 2 naphthyl)alkyl, heteroaryl, substituted heteroaryl, (heteroaryl)alkyl, or substituted (heteroaryl)alkyl, with the proviso that R^{1a} and R^{1b} cannot both be hydrogen;

R^{1c} is, at each occurrence, alkyl, cycloalkyl, (cycloalkyl)alkyl, phenyl, substituted phenyl, phenylalkyl, substituted phenylalkyl, naphthyl, substituted naphthyl, (1 or 2 naphthyl)alkyl, substituted (1 or 2 naphthyl)alkyl, heteroaryl, substituted heteroaryl, (heteroaryl)alkyl, or substituted (heteroaryl)alkyl;

R^3 is lower alkyl, cycloalkyl, phenyl, substituted phenyl, $(CH_2)_nNH_2$, $(CH_2)_nNHCOR^9$, $(CH_2)_nN(C{=}NH)NH_2$, $(CH_2)_mCO_2R^2$, $(CH_2)_mOR^{10}$, $(CH_2)_mSR^{11}$, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), $(CH_2)_n$(1 or 2-naphthyl) or $(CH_2)_n$(heteroaryl), wherein heteroaryl includes pyridyl, thienyl, furyl, thiazolyl, imidazolyl, pyrazolyl, isoxazolyl, pyrazinyl, pyrimidyl, triazinyl, tetrazolyl, and indolyl;

R^{3a} is hydrogen or methyl, or R^3 and R^{3a} taken together are $-(CH_2)_d-$ where d is an interger from 2 to 6;

R^4 is phenyl, substituted phenyl, $(CH_2)_m$phenyl, $(CH_2)_m$(substituted phenyl), cycloalkyl, or benzofused cycloalkyl;

R^5 is hydrogen, lower alkyl, cycloalkyl, phenyl, substituted phenyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), or $(CH_2)_n$(1 or 2-naphthyl);

R^6 is hydrogen, fluorine, oxo, lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), $(CH_2)_n$(1 or 2-naphthyl), OR^{10}, SR^{11} or $NHCOR^9$;

R^7 is hydrogen, oxo (*i.e.*, = O), lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), or $(CH_2)_n$(1 or 2-naphthyl);

R^8 is lower alkyl, cycloalkyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), $(CH_2)_n$(1 or 2-naphthyl), or COR^9;

R^9 is hydrogen, lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), $(CH_2)_n$(1 or 2-naphthyl), OR^{12}, or $NR^{13}R^{14}$;

R^{10} is hydrogen, lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), or $(CH_2)_n$(1 or 2-naphthyl);

R^{11} is lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), or $(CH_2)_n$(1 or 2-naphthyl);

R^{12} is lower alkyl, cycloalkyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), or $(CH_2)_n$(1 or 2-naphthyl);

R^{13} is hydrogen, lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, substituted naphthyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), or $(CH_2)_n$(1 or 2-naphthyl);

R^{14} is hydrogen or lower alkyl;

or R^{13} and R^{14} taken together form a five to seven membered carbocyclic or heterocyclic ring, such as morpholine, or N-substituted piperazine;

R^{15} is phenyl, substituted phenyl, naphthyl, substituted naphthyl, heteroaryl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), $(CH_2)_n$(1 or 2-naphthyl), or $(CH_2)_n$(heteroaryl);

R^{16} and R^{17} are independently lower alkyl, cycloalkyl, phenyl, substituted phenyl, naphthyl, phenylalkyl, substituted phenylalkyl, or (cycloalkyl)alkyl;

R^{18} and R^{19} are independently hydrogen, alkyl, phenyl, substituted phenyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), or R^{18} and R^{19} taken together are $-(CH{=}CH)_2-$;

R^{20} is hydrogen, alkyl, phenyl, substituted phenyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl);

R^{21}, R^{22} and R^{23} are independently hydrogen, or alkyl;

X is CH_2, $(CH_2)_2$, $(CH_2)_3$, or S;

Y^1 is O or NR^{23};

Y^2 is CH_2, O, or NR^{23};

a is 0 or 1 and b is 1 or 2, provided that when a is 1 then b is 1;

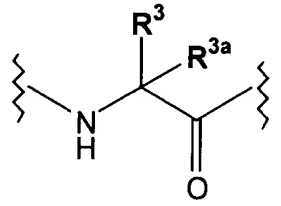
c is 1 or 2, provided that when c is 1 then a is 0 and b is 1;

m is 1 or 2; and

n is 1, 2, 3 or 4;

or a pharmaceutically acceptable salt thereof.

2. The compound of claim 1 wherein A is



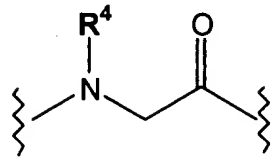
IIa

3. The compound of claim 2 wherein

R^3 is lower alkyl, cycloalkyl, phenyl, substituted phenyl, $(CH_2)_nNH_2$, $(CH_2)_mOR^{10}$, $(CH_2)_mSR^{11}$, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), or $(CH_2)_n$(1 or 2-naphthyl); and

R^{3a} is hydrogen.

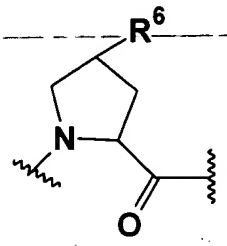
4. The compound of claim 1 wherein A is



IIb

5. The compound of claim 4 wherein R^4 is phenyl, substituted phenyl, $(CH_2)_m$phenyl, $(CH_2)_m$(substituted phenyl), cycloalkyl, or 2-indanyl.

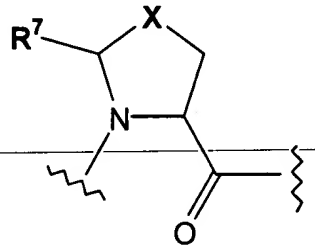
6. The compound of claim 1 wherein A is



IId

7. The compound of claim 6 wherein R^6 is hydrogen, fluorine, cycloalkyl, phenyl, substituted phenyl, naphthyl, $(CH_2)_n$cycloalkyl, $(CH_2)_n$phenyl, $(CH_2)_n$(substituted phenyl), $(CH_2)_n$(1 or 2-naphthyl), OR^{10}, or SR^{11}.

8. The compound of claim 1 wherein A is



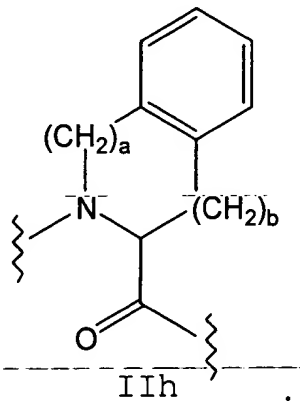
IIe

9. The compound of claim 8 wherein

R^7 is hydrogen, oxo, cycloalkyl, phenyl, substituted phenyl, or naphthyl; and

X is CH_2, $(CH_2)_2$, $(CH_2)_3$, or S.

10. The compound of claim 1 wherein A is

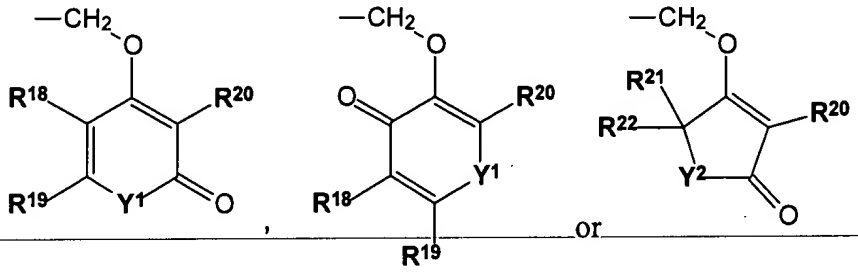


IIh

11. The compound of claim 10 wherein a is 0.

12. The compound of claim 1 wherein B is hydrogen, 2-benzoxazolyl, substituted 2-oxazolyl, CH_2ZR^{15}, CH_2OCO(aryl), or $CH_2OPO(R^{16})R^{17}$, and wherein Z is an oxygen or a sulfur atom.

13. The compound of claim 1 wherein B is



IIIa , IIIb or IIIc

14. The compound of claim 13 wherein R^{18} and R^{19} are independently hydrogen, alkyl, or phenyl, or wherein R^{18} and R^{19} taken together are -$(CH=CH)_2$-.

15. The compound of claim 1 wherein R^1 is phenyl, substituted phenyl, phenylalkyl, substituted phenylalkyl, naphthyl, substituted naphthyl, (1 or 2 naphthyl)alkyl, heteroaryl, or (heteroaryl)alkyl.

16. The compound of claim 3 wherein R^3 is methyl, isopropyl, isobutyl, cyclohexylmethyl, t-butyl, cyclohexyl or phenyl.

17. The compound of claim 16 wherein B is CH_2O(2,3,5,6-tetrafluorophenyl).

18. The compound of claim 1 wherein R^1 is 1-naphthyl and A is valine.

19. The compound of claim 1 wherein R^1 is 1-naphthyl and B is CH_2O(2,3,5,6-tetrafluorophenyl).

20. The compound of claim 1 wherein $R^{1'}$ is hydrogen.

21. The compound of claim 1 wherein $R^{1'}$ is lower alkyl.

22. The compound of claim 1 wherein R is lower alkyl.

23. The compound of claim 1 wherein R is methyl.

~~24. The compound of claim 1 wherein *q* is 1.~~

25. The compound of claim 1 wherein *p* is 2.

26. A pharmaceutical composition comprising a compound of claim 1 in combination with a pharmaceutically acceptable carrier.

27. A method for treating an autoimmune disease, comprising administering an effective amount of the pharmaceutical composition of claim 26 to a patient in need thereof.

28. A method of treating an inflammatory disease, comprising administering an effective amount of the pharmaceutical composition of claim 26 to a patient in need thereof.

29. A method of treating a neurodegenerative disease, comprising administering an effective amount of the pharmaceutical composition of claim 26 to a patient in need thereof.

30. A method of preventing ischemic injury to a patient suffering from a disease associated with ischemic injury, comprising administering an effective amount of the pharmaceutical composition of claim 26 to a patient in need thereof.

31. A method for expanding of hematopoietic cell populations or enhancing their survival, comprising contacting the cells with an effective amount of the pharmaceutical composition of claim 26.

32. The method of claim 31 wherein the cell populations are granulocytes, monocytes, erthrocytes, lymphocytes or platelets for use in cell transfusions.

33. A method of prolonging the viability of an organ that has been removed from a donor or isolated cells derived from an organ for the purpose of a future transplantation procedure, comprising applying an effective amount of the pharmaceutical composition of claim 26 to the organ or isolated cells to prolong the viability of the same as compared to untreated organ or isolated cells.

34. The method of claim 33 wherein the organ is an intact organ.

35. The method of claim 33 wherein the isolated cells are pancreatic islet cells, dopaminergic neurons, blood cells, or hematopoietic cells.

36. A method for promoting healing, comprising administering an effective amount of the pharmaceutical composition of claim 26 to a patient in need thereof.